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Sequence Listing was accepted.

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Reviewer: Durreshwar Anjum

Timestamp: [year=2008; month=3; day=25; hr=13; min=13; sec=42; ms=765;]

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Application No: 10555669 Version No: 2.0

Input Set:

Output Set:

Started: 2008-03-12 16:14:44.865
Finished: 2008-03-12 16:14:46.330
Elapsed: 0 hr(s) 0 min(s) 1 sec(s) 465 ms
Total Warnings: 18
Total Errors: 0
No. of SeqIDs Defined: 20
Actual SeqID Count: 20

| Error code | Error Description |
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| W 402 | Undefined organism found in <213> in SEQ ID (2) |
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| W 213 | Artificial or Unknown found in <213> in SEQ ID (11) |
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| W 213 | Artificial or Unknown found in <213> in SEQ ID (20) |

SEQUENCE LISTING

<110> WU, TZZY-CHOOU
HUNG, CHIEN, FU

<120> ANTI-CANCER DNA VACCINE EMPLOYING PLASMIDS ENCODING
SIGNAL SEQUENCE, MUTANT ONCOPROTEIN ANTIGEN, AND HEAT
SHOCK PROTEIN

<130> JHV-050.01 (19546-5001)

<140> 10555669

<141> 2008-03-12

<150> PCT/US04/013756

<151> 2004-05-05

<150> 60/467,602

<151> 2003-05-05

<160> 20

<170> PatentIn Ver. 3.3

<210> 1

<211> 297

<212> DNA

<213> Human papillomavirus

<220>

<221> CDS

<222> (1)..(297)

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cca gag aca act gat ctc tac tgt tat gag caa tta aat gac agc tca 96
Pro Glu Thr Thr Asp Leu Tyr Cys Tyr Glu Gln Leu Asn Asp Ser Ser
20 25 30

gag gag gag gat gaa ata gat ggt cca gct gga caa gca gaa ccg gac 144
Glu Glu Glu Asp Glu Ile Asp Gly Pro Ala Gly Gln Ala Glu Pro Asp
35 40 45

aga gcc cat tac aat att gta acc ttt tgt tgc aag tgt gac tct acg 192
Arg Ala His Tyr Asn Ile Val Thr Phe Cys Cys Lys Cys Asp Ser Thr
50 55 60

ctt cgg ttg tgc gta caa agc aca cac gta gac att cgt act ttg gaa 240
Leu Arg Leu Cys Val Gln Ser Thr His Val Asp Ile Arg Thr Leu Glu
65 70 75 80

gac ctg tta atg ggc aca cta gga att gtg tgc ccc atc tgt tct cag 288
Asp Leu Leu Met Gly Thr Leu Gly Ile Val Cys Pro Ile Cys Ser Gln

85

90

95

297

gat aag ctt
Asp Lys Leu

<210> 2
<211> 99
<212> PRT
<213> Human papillomavirus

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1 5 10 15

Pro Glu Thr Thr Asp Leu Tyr Cys Tyr Glu Gln Leu Asn Asp Ser Ser
20 25 30

Glu Glu Glu Asp Glu Ile Asp Gly Pro Ala Gly Gln Ala Glu Pro Asp
35 40 45

Arg Ala His Tyr Asn Ile Val Thr Phe Cys Cys Lys Cys Asp Ser Thr
50 55 60

Leu Arg Leu Cys Val Gln Ser Thr His Val Asp Ile Arg Thr Leu Glu
65 70 75 80

Asp Leu Leu Met Gly Thr Leu Gly Ile Val Cys Pro Ile Cys Ser Gln
85 90 95

Asp Lys Leu

<210> 3
<211> 98
<212> PRT
<213> Human papillomavirus

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1 5 10 15

Pro Glu Thr Thr Asp Leu Tyr Cys Tyr Glu Gln Leu Asn Asp Ser Ser
20 25 30

Glu Glu Glu Asp Glu Ile Asp Gly Pro Ala Gly Gln Ala Glu Pro Asp
35 40 45

Arg Ala His Tyr Asn Ile Val Thr Phe Cys Cys Lys Cys Asp Ser Thr
50 55 60

Leu Arg Leu Cys Val Gln Ser Thr His Val Asp Ile Arg Thr Leu Glu
65 70 75 80

Asp Leu Leu Met Gly Thr Leu Gly Ile Val Cys Pro Ile Cys Ser Gln

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Lys Pro

<210> 4

<211> 158

<212> PRT

<213> Human papillomavirus

<400> 4

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20 25 30

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35 40 45

Val Tyr Asp Phe Ala Phe Arg Asp Leu Cys Ile Val Tyr Arg Asp Gly
50 55 60

Asn Pro Tyr Ala Val Cys Asp Lys Cys Leu Lys Phe Tyr Ser Lys Ile
65 70 75 80

Ser Glu Tyr Arg His Tyr Cys Tyr Ser Leu Tyr Gly Thr Thr Leu Glu
85 90 95

Gln Gln Tyr Asn Lys Pro Leu Cys Asp Leu Leu Ile Arg Cys Ile Asn
100 105 110

Cys Gln Lys Pro Leu Cys Pro Glu Glu Lys Gln Arg His Leu Asp Lys
115 120 125

Lys Gln Arg Phe His Asn Ile Arg Gly Arg Trp Thr Gly Arg Cys Met
130 135 140

Ser Cys Cys Arg Ser Ser Arg Thr Arg Arg Glu Thr Gln Leu
145 150 155

<210> 5

<211> 151

<212> PRT

<213> Human papillomavirus

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20 25 30

Cys Lys Gln Gln Leu Leu Arg Arg Glu Val Tyr Asp Phe Ala Phe Arg
35 40 45

Asp Leu Cys Ile Val Tyr Arg Asp Gly Asn Pro Tyr Ala Val Cys Asp
50 55 60

Lys Cys Leu Lys Phe Tyr Ser Lys Ile Ser Glu Tyr Arg His Tyr Cys
65 70 75 80

Tyr Ser Leu Tyr Gly Thr Thr Leu Glu Gln Gln Tyr Asn Lys Pro Leu
85 90 95

Cys Asp Leu Leu Ile Arg Cys Ile Asn Cys Gln Lys Pro Leu Cys Pro
100 105 110

Glu Glu Lys Gln Arg His Leu Asp Lys Lys Gln Arg Phe His Asn Ile
115 120 125

Arg Gly Arg Trp Thr Gly Arg Cys Met Ser Cys Cys Arg Ser Ser Arg
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Thr Arg Arg Glu Thr Gln Leu
145 150

<210> 6

<211> 378

<212> DNA

<213> Human papillomavirus

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tatatatgttag atttgcacc agagacaact gatctctact gttatgagca attaaatgac 180
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cattacaata ttgttaacctt ttgttgcaag tgtgactcta cgcttcgggt gtgcgtacaa 300
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<211> 127

<212> PRT

<213> Human papillomavirus

<400> 7

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20 25 30

Gly Asp Thr Pro Thr Leu His Glu Tyr Met Leu Asp Leu Gln Pro Glu
35 40 45

Thr Thr Asp Leu Tyr Cys Tyr Glu Gln Leu Asn Asp Ser Ser Glu Glu
50 55 60

Glu Asp Glu Ile Asp Gly Pro Ala Gly Gln Ala Glu Pro Asp Arg Ala

65

70

75

80

His Tyr Asn Ile Val Thr Phe Cys Cys Lys Cys Asp Ser Thr Leu Arg

85

90

95

Leu Cys Val Gln Ser Thr His Val Asp Ile Arg Thr Leu Glu Asp Leu

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105

110

Leu Met Gly Thr Leu Gly Ile Val Cys Pro Ile Cys Ser Gln Pro

115

120

125

<210> 8

<211> 90

<212> DNA

<213> Human papillomavirus

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<210> 9

<211> 1878

<212> DNA

<213> Mycobacterium tuberculosis

<400> 9

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gcgttcgccc gcaacggta ggtgctggtc ggccagcccc ccaagaacca ggcagtgacc 180
aacgtcgatc gcaccgtcg ctcggtaaag cgacacatgg gcagcgactg gtccatagag 240
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gtgctcgaaa tcgtcaacga gcccggcg gcccgcctgg cctacggcct cgacaagggc 480
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ctgtccaaagg aagacattga cccgatcgatc aaggacgccc aagcgacgc cgaggaggat 1500
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ggccgggagg ccaagtga 1878

<210> 10
<211> 625
<212> PRT
<213> Mycobacterium tuberculosis

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Ser Arg Thr Thr Pro Ser Ile Val Ala Phe Ala Arg Asn Gly Glu Val
35 40 45

Leu Val Gly Gln Pro Ala Lys Asn Gln Ala Val Thr Asn Val Asp Arg
50 55 60

Thr Val Arg Ser Val Lys Arg His Met Gly Ser Asp Trp Ser Ile Glu
65 70 75 80

Ile Asp Gly Lys Lys Tyr Thr Ala Pro Glu Ile Ser Ala Arg Ile Leu
85 90 95

Met Lys Leu Lys Arg Asp Ala Glu Ala Tyr Leu Gly Glu Asp Ile Thr
100 105 110

Asp Ala Val Ile Thr Thr Pro Ala Tyr Phe Asn Asp Ala Gln Arg Gln
115 120 125

Ala Thr Lys Asp Ala Gly Gln Ile Ala Gly Leu Asn Val Leu Arg Ile
130 135 140

Val Asn Glu Pro Thr Ala Ala Ala Leu Ala Tyr Gly Leu Asp Lys Gly
145 150 155 160

Glu Lys Glu Gln Arg Ile Leu Val Phe Asp Leu Gly Gly Thr Phe
165 170 175

Asp Val Ser Leu Leu Glu Ile Gly Glu Gly Val Val Glu Val Arg Ala
180 185 190

Thr Ser Gly Asp Asn His Leu Gly Gly Asp Asp Trp Asp Gln Arg Val
195 200 205

Val Asp Trp Leu Val Asp Lys Phe Lys Gly Thr Ser Gly Ile Asp Leu
210 215 220

Thr Lys Asp Lys Met Ala Met Gln Arg Leu Arg Glu Ala Ala Glu Lys
225 230 235 240

Ala Lys Ile Glu Leu Ser Ser Ser Gln Ser Thr Ser Ile Asn Leu Pro

245 250 255
Tyr Ile Thr Val Asp Ala Asp Lys Asn Pro Leu Phe Leu Asp Glu Gln
260 265 270

Leu Thr Arg Ala Glu Phe Gln Arg Ile Thr Gln Asp Leu Leu Asp Arg
275 280 285

Thr Arg Lys Pro Phe Gln Ser Val Ile Ala Asp Thr Gly Ile Ser Val
290 295 300

Ser Glu Ile Asp His Val Val Leu Val Gly Gly Ser Thr Arg Met Pro
305 310 315 320

Ala Val Thr Asp Leu Val Lys Glu Leu Thr Gly Gly Lys Glu Pro Asn
325 330 335

Lys Gly Val Asn Pro Asp Glu Val Val Ala Val Gly Ala Ala Leu Gln
340 345 350

Ala Gly Val Leu Lys Gly Glu Val Lys Asp Val Leu Leu Asp Val
355 360 365

Thr Pro Leu Ser Leu Gly Ile Glu Thr Lys Gly Gly Val Met Thr Arg
370 375 380

Leu Ile Glu Arg Asn Thr Thr Ile Pro Thr Lys Arg Ser Glu Thr Phe
385 390 395 400

Thr Thr Ala Asp Asp Asn Gln Pro Ser Val Gln Ile Gln Val Tyr Gln
405 410 415

Gly Glu Arg Glu Ile Ala Ala His Asn Lys Leu Leu Gly Ser Phe Glu
420 425 430

Leu Thr Gly Ile Pro Pro Ala Pro Arg Gly Ile Pro Gln Ile Glu Val
435 440 445

Thr Phe Asp Ile Asp Ala Asn Gly Ile Val His Val Thr Ala Lys Asp
450 455 460

Lys Gly Thr Gly Lys Glu Asn Thr Ile Arg Ile Gln Glu Gly Ser Gly
465 470 475 480

Leu Ser Lys Glu Asp Ile Asp Arg Met Ile Lys Asp Ala Glu Ala His
485 490 495

Ala Glu Glu Asp Arg Lys Arg Arg Glu Glu Ala Asp Val Arg Asn Gln
500 505 510

Ala Glu Thr Leu Val Tyr Gln Thr Glu Lys Phe Val Lys Glu Gln Arg
515 520 525

Glu Ala Glu Gly Gly Ser Lys Val Pro Glu Asp Thr Leu Asn Lys Val
530 535 540

Asp Ala Ala Val Ala Glu Ala Lys Ala Leu Gly Gly Ser Asp Ile

545 550 555 560

Ser Ala Ile Lys Ser Ala Met Glu Lys Leu Gly Gln Glu Ser Gln Ala
565 570 575

Leu Gly Gln Ala Ile Tyr Glu Ala Ala Gln Ala Ala Ser Gln Ala Thr
580 585 590

Gly Ala Ala His Pro Gly Gly Glu Pro Gly Gly Ala His Pro Gly Ser
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610 615 620

Lys

625

<210> 11

<211> 2104

<212> DNA

<213> Artificial Sequence

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<221> CDS

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<220>

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Pro Glu Thr Thr Asp Leu Tyr Cys Tyr Glu Gln Leu Asn Asp Ser Ser
20 25 30

gag gag gag gat gaa ata gat ggt cca gct gga caa gca gaa ccg gac 144
Glu Glu Glu Asp Glu Ile Asp Gly Pro Ala Gly Gln Ala Glu Pro Asp
35 40 45

aga gcc cat tac aat att gta acc ttt tgt tgc aag tgt gac tct acg 192
Arg Ala His Tyr Asn Ile Val Thr Phe Cys Cys Lys Cys Asp Ser Thr
50 55 60

ctt cgg ttg tgc gta caa agc aca cac gta gac att cgt act ttg gaa 240
Leu Arg Leu Cys Val Gln Ser Thr His Val Asp Ile Arg Thr Leu Glu
65 70 75 80

gac ctg tta atg ggc aca cta gga att gtg tgc ccc atc tgt tct caa 288
Asp Leu Leu Met Gly Thr Leu Gly Ile Val Cys Pro Ile Cys Ser Gln
85 90 95

gga